

Iowa Department of Natural Resources
Wastewater Section
Construction Permit Application
SCHEDULE N, Rotating Biological Contactor

DATE PREPARED	PROJECT IDENTITY	DNR USE	
		PROJECT NO.	
DATE REVISED		PERMIT NO.	

1. Design Loadings: (waste entering RBC unit operation)

	<u>ADW</u>	<u>AWW</u>	<u>MWW</u>	<u>PHWW</u>
Flow, MGD	_____	_____	_____	_____
BOD ₅ , mg/l	_____	_____	_____	_____
TSS, mg/l	_____	_____	_____	_____
NH ₃ -N, mg/l	_____	_____	_____	_____
Design Temp. _____ °F				

Is the ratio of the peak hourly wet weather flow to the average wet weather flow greater than 2.5? Yes ☐ No ☐

Is the industrial BOD₅ load less than 10% of the total BOD₅? Yes ☐ No ☐

2. RBC unit operation follows _____ and precedes _____

3. Design Calculations – based on which manufacturer’s guidelines _____

For Carbonaceous Removal -

	<u>ADW</u>	<u>AWW</u>	<u>MWW</u>
Influent soluble BOD, mg/l	_____	_____	_____
Soluble BOD when nitrif. begins, mg/l	_____	_____	_____
Hydraulic loading rate, gpd/ft ²	_____	_____	_____
Temperature correction factor	_____	_____	_____
Adjusted hydraulic loading rate, gpd/ft ²	_____	_____	_____
Required surface area, ft ²	_____	_____	_____

For N₃-N Conversion -

	<u>ADW</u>	<u>AWW</u>	<u>MWW</u>
Influent NH ₃ -N, mg/l	_____	_____	_____
Effluent NH ₃ -N, mg/l	_____	_____	_____
Hydraulic loading rate, gpd/ft ²	_____	_____	_____
Temperature correction factor	_____	_____	_____
Adjusted hydraulic loading rate, gpd/ft ²	_____	_____	_____
Required surface area, ft ²	_____	_____	_____
Effluent BOD ₅ , mg/l	_____	_____	_____

4. Media arrangement -

	<u>Conventional Media</u>	<u>High-Density Media</u>	<u>Total</u>
Surface area, ft ²	_____	_____	_____
No. of stages/shaft	_____	_____	_____
No. of shafts/row	_____	_____	_____
No. of rows	_____	_____	_____

5. General information -

Does wastewater flow proceed parallel or perpendicular to the shaft? _____

Measures taken to prevent solids deposition on tank bottom _____

Type of shaft driving device _____ Shaft speed _____ RPM

Type of enclosure provided _____

Condensation and corrosion protection provided _____

Method of ventilation _____

Method of shaft removal _____

Method of bearing replacement _____

Are unit drains provided? _____ Discharge to _____

Is service bypass provided? _____ Discharge to _____